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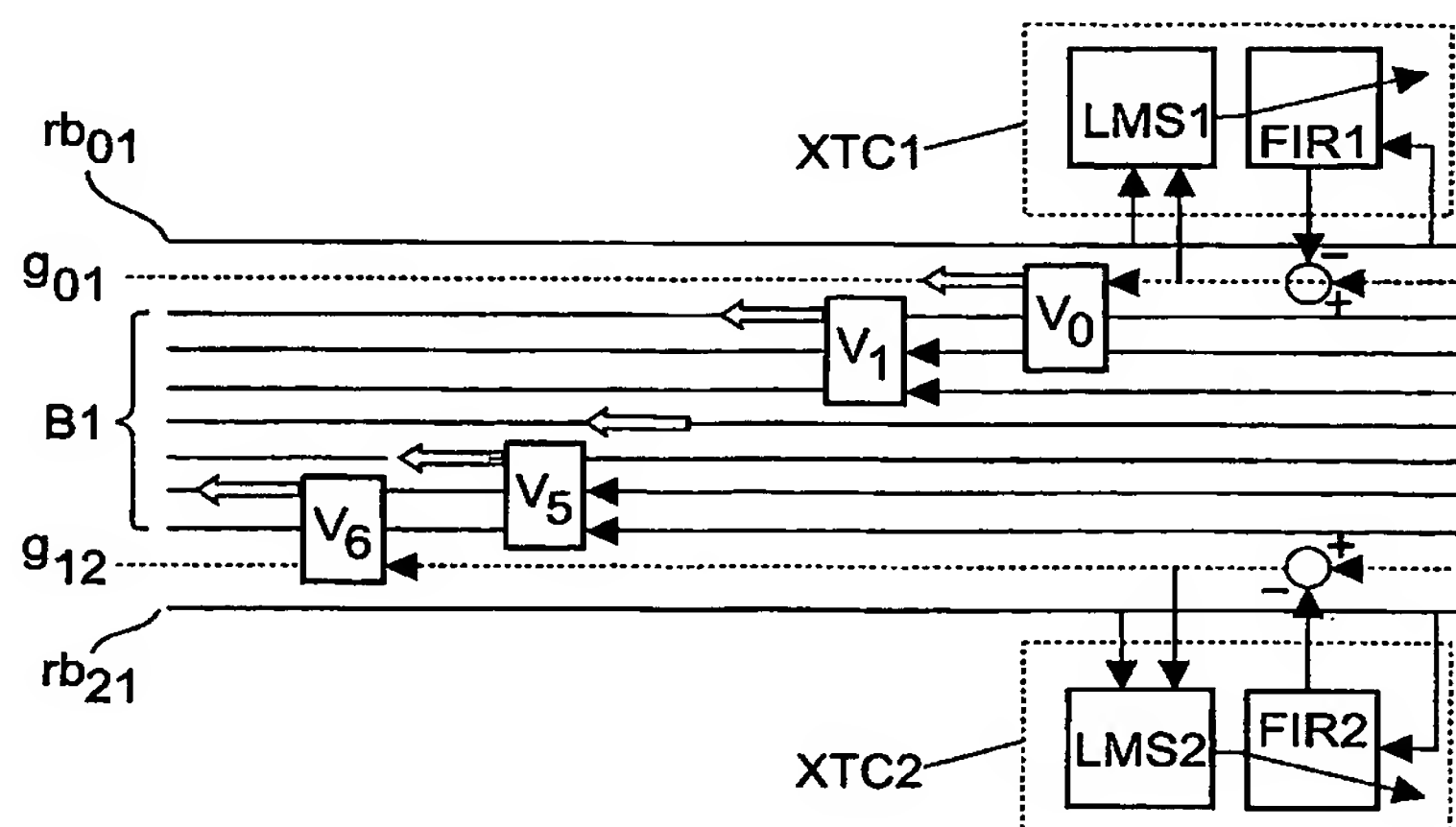
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(54) Title: **SYMBOL DETECTION APPARATUS AND METHOD FOR TWO-DIMENSIONAL CHANNEL DATA STREAM WITH CROSS-TALK CANCELLATION**



(57) Abstract: The present invention relates to a symbol detection apparatus for detecting the symbol values of a two-dimensional channel data stream recorded on a record carrier, said channel data stream comprising a set of contiguous symbol strips (B) of symbol rows (r) onedimensionally evolving along a first direction and being aligned with each other along a second direction, said two directions constituting a two-dimensional lattice of symbol positions. In order to avoid a substantial loss in detection performance at the edges of a 2D symbol strip in a 2D format, a symbol detector apparatus is proposed comprising: a cross-talk cancellation unit (XTC) for cancellation of radial inter-symbol interference, also known as cross-talk or inter-track interference, present in the first adjacent symbol rows ($g_{01}, g_{02}; r_1, r_{N+2}$) of a symbol strip (B1) from the next but one adjacent symbol row ($rb_{01}, rb_{02}; r_0, r_{N+3}$) of said symbol strip (B1) by applying for each first adjacent symbol row ($g_{01}, g_{02}; r_1, r_{N+2}$) a cross-talk cancellation between a first adjacent symbol row ($g_{01}, g_{02}; r_1, r_{N+2}$) and its neighboring symbol row ($rb_{01}, rb_{02}; r_0, r_{N+3}$) not belonging to said symbol strip (B1), and a 2D symbol detector (V) for symbol detection of the symbols of said symbol strip (B1) together with said first adjacent symbol rows ($g_{01}, g_{02}; r_1, r_{N+2}$).

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